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April 6.

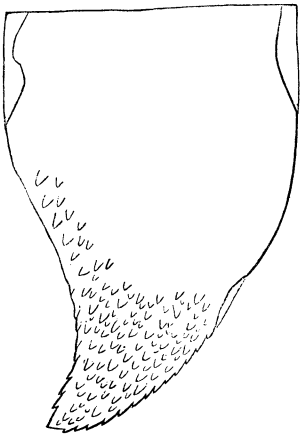
The President, Dr. Ruschenberger, in the chair.

Twenty-six members present.

Remarks on a Coal Fossil, etc.—Prof. Leidy said that among the objects presented this evening there are several worthy the attention of the members.

One of these is a specimen of the Ceratodus Forsteri, from Queensland, presented by Dr. John Belisario, of Sidney, Australia, through Dr. McQuillen. The fish is a representative of the Dipnoi, or double breathers, like the Lepidosiren, being provided with both lungs and gills. The genus was long ago named by Agassiz, from isolated teeth found in the Triassic and Jurassic rocks of Europe. The C. Forsteri was discovered only a few years since, and was referred to Ceratodus by Dr. Günther, from the near resemblance of the teeth of the fish to the fossils described under that name.

Another specimen, presented by Dr. S. C. De Vesy, of Williamstown, Dauphin Co., Pa., appears to be a fitting companion to the former. It consists of a fragment of coal shale, from the coal mines of Williamstown, with an impression which looks as if it might be that of the tail of a relative of the Ceratodus, or of a huge tadpole. Among the many enigmatic impressions occurring in the coal shales, this is better defined than usual. It is 8¾ inches long and 6 inches at the widest part. The accompanying figure is an outline sketch one-fourth the diameter of the original. Towards the upturned end of the specimen there are many strongly impressed conical pits, looking as if produced by prominent scale-like appendages, in the interspaces of which there are many minute impressions of the same form. The character of the fossil is very uncertain; it may be that of a batrachian or fish allied to Ceratodes. The coal period is well characterized by abundance of remains of both kinds of animals. Perhaps, however, the impression may be of vegetable origin.



¼ diameter.

Accompanying the fossil, there is another fragment of coal shale with vegetable remains, and apparently a lamellibranch shell.

Remarks on Elephant Remains.—Prof. LEIDY called attention to the fragment of a fossil elephant molar tooth presented this evening by Messrs. W. W. Jefferis, and J. B. Dillingham.

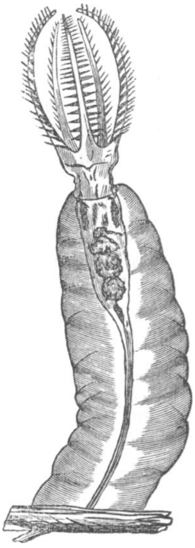
The specimen consisted of four dental plates, and is quite friable. Adherent to it are a number of crystals of vivianite and also some of the same material in pulverulent form. It was found resting on the Kaolin bed, about eight feet from the surface of the American Kaolin Works, near Chadd's Ford, Delaware Co., Pa.

Prof. Leidy also exhibited drawings of an elephant tooth which had been submitted to his inspection by Dr. E. A. Wood, of Pittsburg. The specimen was dredged at the confluence of the Monongahela and Alleghany rivers. The tooth, an upper molar, is well preserved and nearly entire. Weight 9 lbs. 15½ ounces. The triturating surface extends about half the fore and aft measurement of the tooth, and exhibits a dozen double dentinal bars.

Another drawing, submitted by Prof. E. O. Hovey, represents a hugh elephant tooth, from California, and now preserved in the cabinet of Wabash College, Indiana. The specimen appears to be a last molar, and weighs 21½ lbs. Towards its backpart the tooth is 13 inches long. The triturating surface, 7½ inches long, presents eleven double dentinal plates.

All the specimens are supposed to belong to the extinct American Elephant, Elephas americanus.

Remarks on Stephanoceros. — C. NEWLIN PEIRCE exhibited drawings of a specimen of an aquatic animal, belonging to the genus Stephanoceros, which had been recently observed by him. In doing so, he said he was induced to bring it before the Academy because it was, he believed, rarely met with in this country, and had not been previously here described.



In its main characteristics, such as spiral carapace or case, five tentacle-like lobes armed with cilia, or, more properly, setæ, eye-spots, jaws, stomach, etc., it corresponds with the description given by Mr. C. Cubitt in his paper entitled "Observations on the Economy of Stephanoceros," in the "Monthly Microscopical Journal," vol. iii., 1870, p. 242; but in addition to that very full sketch of this interesting object, there were some points of interest not there recorded. First was the great length of setæ or bristles projecting from the ends of the tentacles (only to be seen by especial care in focalizing with the lens), these overlapping each other formed a network in which were entrapped Paramecia of various sizes, as many as forty having been observed there at one time. And by virtue of these long setæ the animal's facility for procuring prey was greatly enhanced.

These minute objects which served as food were by a spasmodic effort of the bristles gradually brought within the arms, and from there, with this continued spasmodic movement which has been described by Mr. Cubitt, were brought within the vortex induced by an arrangement of cilia around the mouth, which, unlike the setæ on the tentacles, were, while the animal was feeding, kept in a whorl.

The action of the setæ on the lobes of the Stephanoceros is spasmodic; it creates no vortex, and it is only by actual contact with these setæ that floating particles are whipped within the area inclosed by the lobes, where, by the same whipping action, they are twitched from point to point, irregularly downwards, until they come within the range of a vortex, which is due not to any action of the setæ, but to a range of minute *cilia* in the funnel, distinct from the foraging appliances.

For two weeks the animal under observation fed voraciously. The last few days of this time granular layers were rapidly deposited on each side of the body just within the case, until the upper part of the carapace was distended with this accumulation. For twenty-four hours following this condition but little or no food passed into the digestive cavity; any infusoria or other foreign substance accidentally coming within the tentacles being immediately expelled by a sudden constriction of these organs at their base.

It was evident from appearances that some change was about to take place. The animal, at first very sensitive, withdrawing into its cell on the slightest jar of the table on which the instrument was placed, now but seldom contracted its retractile muscle even though the zoophyte-trough, in which it was examined, was quite violently tapped.

On the sixteenth day of observation it was unavoidably left for a few hours; on returning to it the tentacles, with the above-described accumulated dark mass, were found to have left the original case and were attached to a portion of the plant beneath the branch to which it (the original case) adhered. It now presented somewhat the appearance of an animal figured and described by Pritchard as a young Stephanoceros, a dark globular mass with five spreading or divergent tentacles, and at the distal extremity a very slight prolongation by which it was attached to a plant-stem by an almost invisible thread, devoid entirely of any cell or carapace. Not long, however, was it destined to remain in this nude condition, for in twenty-four hours appearances of a cell were visible, and within three days it was domiciled in as beautiful a spiral case as the one it had left. Its contractile muscle developing rapidly with the length of the cell, in a few days it presented to the observer all the peculiarities of the parent, and within two weeks was again ready for another change such as is above described, and which was accomplished with a similar result. The Stephanoceros being too high in the scale of animal life to propagate by gemmation or division, the process above portrayed can have but a remote influence upon reproduction, as there was no multiplication by this change.

The original cell with its retracted body within, though remaining for weeks in an apparently perfect condition, was not seen to increase or in the least to change—the growth-force seemingly being confined to the detached head and its accompanying organs.

Dr. Leidy stated that he had never seen specimens of Stephanoceros until they were shown to him by Mr. Peirce.

On the Disposition of the Great Omentum in Cynocephalus porcarius, etc.—Dr. H. C. CHAPMAN made the following remarks:

Man is usually regarded as being the only animal in which the peritoneum exhibits that arrangement in which the great omentum adheres to the colon. I take the opportunity of calling the attention of the members to the fact that I found the great omentum more or less adherent to the colon in a *Cynocephalus porcarius* which recently died at the Zoological Garden as also in a *Mecacus nemestrinus* from the same institution. In the embryonic condition of man the great omentum does not adhere to the colon, and this condition usually remains permanent in the other mammals. In the cases just mentioned we have an interesting illustration of a transitional stage in the development of the peritoneum in man, permanently retained in monkeys.

On the Trias of York County, Pa.—Prof. FRAZER remarked that, as a matter of interest to students of the geology of the Trias, it may be stated that in the recent examination of these beds in York County the supposed constant N. W. dip was found to have very many exceptions.

A further fact was noted, viz., the deposition of these beds at their margin unconformably on the upturned edges of the lower silurian limestone.

Several indentations and bays of this limestone found on the Triassic border, exhibit its last dip away from the latter, which has the opposite dip. The improbability of the formation of these Trias rocks by deposition along a sloping shore was mentioned.

Mr. Young stated that observations recently made by him in the vicinity of Norristown confirmed this state of facts.

Prof. Cope wanted to know what had become of the other side of the basin, if the said theory of the formation of Trias were true.

Prof. Frazer replied that the theory was not his theory, and its difficulties must be overcome by its adherents.

The death of Dr. A. A. Henderson, U. S. N., of Dr. D. R. Bannan, U. S. N., members, and John Edward Gray, correspondent, was announced.

April 13.

The President, Dr. RUSCHENBERGER, in the chair.

Ten members present.

The following paper was presented for publication: "Synopsis of the Geomyidæ." By Dr. Elliott Coues, U. S. A.

April 20.

The President, Dr. RUSCHENBERGER, in the chair.

Twenty-four members present.

The following paper was presented for publication: "Descriptions of a new Fossil Ostrea from the Amazon." By T. A. Conrad.

On a Curious Rhizopod.—Prof. LEIDY remarked that in some water with aquatic plants, from Absecom Pond, N. J., preserved in an aquarium during the winter, he had detected a remarkable rhizopod, which he thought might best be compared to the reticular pseudopods of a Gromia separated from the body. The creature moved actively and assumed the most varied forms. At one time it appears as a cylinder or a ball of jelly which may spread itself into a disk of extreme thinness, from the edge of which emanate a multitude of delicate pseudopods minutely ramifying, and with the contiguous branches anastomosing, as in the extension of the net of a Gromia. At other times the creature divides up into branches from a trunk in the manner of a tree, but with the contiguous branches anastomosing. At times also the animal assumes the form of a cord, and the jelly accumulating along some portion of it will then move along the apparent cord like a drop of water running down a piece of twine. The branching pseudopods extending into a net, the large angular meshes gradually contract by the widening of the cords, so that the meshes become perfectly circular and appear like vacuoles imbedded in the jelly. A circulation of jelly with granules is observed along all the pseudopodal filaments exactly as in Gromia. No trace of a nucleus or investing membrane in any position could be detected, but the protoplasmic structure contained a multitude of minute vacuoles. Most of the specimens contained no food, and only one of the largest was observed to contain numerous minute Closteria.